SEQUENCE LISTING

<110> Luyten, Frank P.
Moos, Malcolm J.R.
Hoang, Bang
Wang, Shouwen

<120> ISOLATION AND USE OF TISSUE
GROWTH-INDUCING FRZB PROTEIN

<130> NIH133.1CPC1

<140> US 10/028051
<141> 2001-12-19

<150> US 08/822333
<151> 1997-03-20

<150> US 08/729,452
<151> 1996-10-11

<160> 23

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<212> DNA
<213> Bos taurus

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<213> Bos taurus

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Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
        35   40   45
Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
    50   55   60
Ala Ile Leu Ala Ile Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
65   70   75   80
Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
                85   90   95
Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
            100   105   110
Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
        115   120   125
Ser Trp Pro Glu Ser Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg
    130   135   140
Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
145   150   155   160
Phe Pro Met Asp Ser Ser Asn Gly Asn Cys Arg Gly Ala Ser Ser Glu
                165   170   175
Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
            180   185   190
Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Ile Lys Thr
        195   200   205
Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys
    210   215   220
Ala Ser Leu Val Asn Ile Pro Arg Glu Thr Val Asn Leu Tyr Thr Ser
225   230   235   240
Ser Gly Cys Leu Cys Pro Pro Leu Asn Val Asn Glu Glu Tyr Leu Ile
                245   250   255
Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly
            260   265   270
Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg
        275   280   285
Trp Asp Met Lys Leu Arg His Leu Gly Leu Asn Thr Ser Asp Ser Ser
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<213> Homo sapiens

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<211> 325
<212> PRT

<213> Homo sapiens

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Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
        35   40   45
Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
    50   55   60
Ala Ile Leu Ala Ile Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
65   70   75   80
Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
                85   90   95
Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
            100   105   110
Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
        115   120   125
Ser Trp Pro Glu Asn Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg
    130   135   140
Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
145   150   155   160
Phe Pro Met Asp Ser Ser Asn Gly Asn Cys Arg Gly Ala Ser Ser Glu
                165   170   175
Arg Cys Lys Cys Lys Pro Ile Arg Ala Thr Gln Lys Thr Tyr Phe Arg
            180   185   190
Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Ile Lys Thr
        195   200   205
Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys
    210   215   220
Ser Ser Leu Val Asn Ile Pro Arg Asp Thr Val Asn Leu Tyr Thr Ser
225   230   235   240
Ser Gly Cys Leu Cys Pro Pro Leu Asn Val Asn Glu Glu Tyr Ile Ile
                245   250   255
Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly
            260   265   270
Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg
        275   280   285
Trp Asp Met Lys Leu Arg His Leu Gly Leu Ser Lys Ser Asp Ser Ser
    290   295   300
Asn Ser Asp Ser Thr Gln Ser Gln Lys Ser Gly Arg Asn Ser Asn Pro
305   310   315   320
Arg Gln Ala Arg Asn
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<210> 5
<211> 111
<212> PRT
<213> Rattus norvegicus

<400> 5
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            20   25   30
Leu Glu Val His Gln Phe Tyr Pro Leu Val Lys Val Gln Cys Ser Ala
        35   40   45
Glu Leu Lys Phe Phe Leu Cys Ser Met Tyr Ala Pro Val Cys Thr Val
    50   55   60
Leu Glu Gln Ala Leu Pro Pro Cys Arg Ser Leu Cys Glu Arg Ala Gln
65   70   75   80
Gly Cys Glu Ala Leu Met Asn Lys Phe Gly Phe Gln Trp Pro Asp Thr
                85   90   95
Leu Lys Cys Glu Lys Phe Pro Val His Gly Arg Gly Glu Leu Cys
            100   105   110

<210> 6
<211> 111
<212> PRT
<213> Drosophila melanogaster

<400> 6
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            20   25   30

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Leu Glu Val His Gln Phe Ala Pro Leu Val Lys Ile Gly Cys Ser Asp
        35                  40                  45
Asp Leu Gln Leu Phe Leu Cys Ser Leu Tyr Val Pro Val Cys Thr Ile
    50                  55                  60
Leu Glu Arg Pro Ile Pro Pro Cys Arg Ser Leu Cys Glu Ser Ala Arg
65                  70                  75                  80
Val Cys Glu Lys Leu Met Lys Thr Tyr Asn Phe Asn Trp Pro Glu Asn
                85                  90                  95
Leu Glu Cys Ser Lys Phe Pro Val His Gly Gly Glu Asp Leu Cys
            100                 105                 110
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<210> 7
<211> 319
<212> PRT
<213> Xenopus laevis

<400> 7

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            20                  25                  30
Pro Val Arg Ile Pro Met Cys Lys Ser Met Pro Trp Asn Met Thr Lys
        35                  40                  45
Met Pro Asn His Leu His His Ser Thr Gln Ala Asn Ala Ile Leu Ala
    50                  55                  60
Ile Glu Gln Phe Glu Gly Leu Leu Thr Thr Glu Cys Ser Gln Asp Leu
65                  70                  75                  80
Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys Thr Ile Asp Phe
                85                  90                  95
Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys Glu Arg Ala Arg
            100                 105                 110
Ala Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His Thr Trp Pro Glu
        115                 120                 125
Ser Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg Gly Val Cys Ile
    130                 135                 140
Ser Pro Glu Ala Ile Val Thr Val Glu Gln Gly Thr Asp Ser Met Pro
145                 150                 155                 160
Asp Phe Pro Met Asp Ser Asn Asn Gly Asn Cys Gly Ser Thr Ala Gly
                165                 170                 175
Glu His Cys Lys Cys Lys Pro Met Lys Ala Ser Gln Lys Thr Tyr Leu
            180                 185                 190
Lys Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys
        195                 200                 205
Val Lys Cys His Asp Ala Thr Ala Ile Val Glu Val Lys Glu Ile Leu
    210                 215                 220
Lys Ser Ser Leu Val Asn Ile Pro Lys Asp Thr Val Thr Leu Tyr Thr
225                 230                 235                 240
Asn Ser Gly Cys Leu Cys Pro Gln Leu Val Ala Asn Glu Glu Tyr Ile
                245                 250                 255
Ile Met Gly Tyr Glu Asp Lys Glu Arg Thr Arg Leu Leu Leu Val Glu
            260                 265                 270
Gly Ser Leu Ala Glu Lys Trp Arg Asp Arg Leu Ala Lys Lys Val Lys
        275                 280                 285
Arg Trp Asp Gln Lys Leu Arg Arg Pro Arg Lys Ser Lys Asp Pro Val
    290                 295                 300
Ala Pro Ile Pro Asn Lys Asn Ser Asn Ser Arg Gln Ala Arg Ser
305                 310                 315
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<210> 8
<211> 319
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus sequence

<400> 8

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            20                  25                  30
Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp Asn Met
        35                  40                  45
Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn Ala Ile
    50                  55                  60
Leu Ala Ile Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys Ser Pro
65                  70                  75                  80
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Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys Thr Ile
85 90 95
Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys Glu Arg
100 105 110
Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His Ser Trp
115 120 125
Pro Glu Ser Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg Gly Val
130 135 140
Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp Phe Pro
145 150 155 160
Met Asp Ser Ser Asn Gly Asn Cys Arg Gly Ala Ser Ser Glu Arg Cys
165 170 175
Lys Cys Lys Pro Arg Ala Thr Gln Lys Thr Tyr Phe Arg Asn Asn Tyr
180 185 190
Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Ile Lys Thr Lys Cys His
195 200 205
Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys Ser Ser Leu
210 215 220
Val Asn Ile Pro Arg Asp Thr Val Asn Leu Tyr Thr Ser Ser Gly Cys
225 230 235 240
Leu Cys Pro Pro Leu Asn Val Asn Glu Glu Tyr Ile Ile Met Gly Tyr
245 250 255
Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly Ser Ile Ala
260 265 270
Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg Trp Asp Met
275 280 285
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Ser Gln Lys Pro Gly Arg Asn Ser Asn Ser Arg Gln Ala Arg Asn
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<213> Artificial Sequence

<220>
<223> Synthetic peptide

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Asn Val Asn Glu Glu Tyr Leu Ile Met Gly Tyr Glu Phe Pro
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<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<221> misc_feature
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<210> 11
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<212> DNA
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<220>
<223> oligonucleotide primer

<221> misc_feature
<222> (1)...(18)
<223> n = A,T,C or G

<400> 11
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<210> 12
<211> 19

<212> PRT
<213> Artificial Sequence

<220>
<223> tryptic fragment

<221> VARIANT
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<210> 13
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> tryptic fragment

<400> 13
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<210> 14
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<212> PRT
<213> Artificial Sequence

<220>
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<400> 14
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 1               5                   10                  15
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<210> 15
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> tryptic fragment

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<210> 16
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<220>
<223> synthetic peptide

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<210> 17
<211> 30
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<223> oligonucleotide primer

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<220>
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<400> 21
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<210> 22
<211> 22
<212> DNA
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<220>
<223> oligonucleotide primer

<400> 22
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<210> 23
<211> 1291
<212> DNA
<213> Xenopus laevis

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